

CS 476/576 Project: Therapeutic Connection Platform

The goal of this project is to design and implement a comprehensive platform that connects patients with therapists, facilitates therapeutic relationships, and manages the entire therapy process. Students are expected to fulfill the following requirements of the customer:

Core System Requirements

- The platform must support three primary user roles: Patients, Therapists, and Administrators.
- The registration process must include verification for therapists, requiring license information and credentials that must be validated before their profile becomes active.
- Patients should be able to browse therapists without creating an account, but must register to book appointments or communicate with therapists.
- Users must be able to change their passwords and personal information easily through a secure profile management interface.

Therapist Discovery and Rating

- The platform must include a sophisticated search system allowing patients to find therapists based on multiple parameters:
 - Specialization (anxiety, depression, family therapy, etc.)
 - Location (for in-person sessions) or availability for virtual sessions
 - Languages spoken
 - Rating and reviews
 - Session cost range
 - Available time slots
- Patients must be able to filter and sort search results by these parameters in ascending/descending order.
- Students must implement the open-source version for efficient therapist discovery and search functionality (eg. Elasticsearch -not the paid version-).
- Patients who have completed at least one session with a therapist can leave ratings (1-5 stars) and written reviews.
 - Reviews must be moderated by administrators before becoming visible.
 - Therapists can respond to reviews once approved.

Appointment Management

- The system must provide an interactive calendar for therapists to set their availability.
 - Therapists can define recurring availability patterns.
 - Therapists can block off time for vacations or other commitments.
- Patients must be able to view available time slots for therapists and book appointments directly through the platform.
- The system must support both in-person and virtual session types.
 - For virtual sessions, the platform should include a secure video conferencing solution. (You can use Jitsi)
- Automated reminders must be sent to both patients and therapists before scheduled appointments.
 - Email notifications 24 hours before appointments
- Patients can reschedule or cancel appointments within a therapist-defined window (e.g., 24 hours notice).

Therapeutic Communication Tools

- Therapists must be able to assign therapeutic tasks/homework to patients.
 - Tasks are todos for patients.
 - Patients must be able to upload responses or mark tasks as complete.
- The platform must include a progress tracking system where:
 - Therapists can document session notes (visible only to the therapist).
 - Patients can track mood, symptoms, or other metrics over time.
 - Both can view progress visualizations.
- All communications and records must be encrypted and securely stored.

Payment System

- The platform must integrate Stripe as the payment processing system.
 - Students must implement the Stripe API for handling all payment transactions.
 - Stripe Sandbox/Test mode must be used for development and testing purposes.
- The system must support multiple payment methods through Stripe:
 - Credit/debit cards
 - Health Savings Account (HSA) cards
- Therapists must be able to set their rates for different types of sessions (initial consultation, standard session, extended session, etc.).
- Patients must receive receipts for all payments, which can be downloaded for insurance reimbursement purposes.
- The system should handle automatic billing for recurring appointments using Stripe's subscription features.
- Therapists should be able to offer sliding scale rates or discount packages to specific patients.

Administrative Features

- Administrators must verify therapist credentials and approve therapist profiles.
- Administrators must moderate patient reviews before they become public.
- The system must generate reports on platform usage, therapist ratings, payment processing, etc.
- Administrators must be able to handle disputes between patients and therapists.

Additional Requirements

- A mailing system is required for account verification, appointment reminders, therapeutic task notifications, and marketing communications (opt-in).
- The platform must include a recommendation engine that suggests appropriate therapists to patients based on their profile information and search history.
- The system must track session attendance and follow-up care.
- Therapists must be able to generate and share treatment plans with patients.
- Two different platforms are required: a responsive web application and a mobile application (iOS or Android).
- The platform must include an analytics dashboard for therapists to track their practice metrics (patient retention, session frequency, cancellation rates, etc.).
- The system must support group therapy sessions where multiple patients can join a single therapist-led session.

Technical Requirements

- All personal health information must be encrypted at rest and in transit.
- The platform must implement robust authentication and authorization mechanisms.
- The system must be scalable to handle growing numbers of users and sessions.
- The platform must maintain comprehensive audit logs for all access to patient information.
- The API design should follow RESTful principles and be well-documented.
- The codebase should include comprehensive test coverage.